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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/327,266	06/07/1999	ROE-HOAN YOON	MCT-2	5252

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EXAMINER

HRUSKOCI, PETER A

ART UNIT	PAPER NUMBER
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1724

12

DATE MAILED: 12/18/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/327,266	Applicant(s) YOON, ROE-HOAN	
	Examiner Peter A. Hruskoci	Art Unit 1724	

-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 1999 and 19 May 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>11</u> . | 6) <input type="checkbox"/> Other: _____                                    |

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1. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. It is submitted that omitting "the initial hydrophobization step" as recited in claim 5 fails to further limit the process of claim 1.
2. Claims 1-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1-38 "appropriate", "low", "water contact angle", "greatly", "when", "etc.", "suitable", "normally", "considerably", "various", "disclosed in claim 11", "high", "identified in claims 14, 15, and 16", and "not limited to", "the same as for claim 1", are vague and indefinite because it is unclear how these terms further limit the claims. In claims 1, 18, 25, 30, and 35 "the surfactant molecules" and "the conditioned slurry", in claim 10 "the said mechanical means", in claim 21 "the reagents", in claims 22, 27, 32, and 36 "the range", in claims 23, 24, 28, 29, 33, 34, 37, and 38 "the constrains and conditions", and in claims 25, 30, and 35 "the filter cake", lack clear antecedent basis.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. 5,670,056. Yoon et al. disclose (see col. 2 line 21 through col. 6 line 32) a process for dewatering a slurry of fine particulate material substantially as claimed. The claims differ from Yoon et al. by reciting specific steps for rendering the particulate material hydrophobic and for enhancing the hydrophobicity of the hydrophobic particulate material. It is submitted that the addition of a combination of non-ionic surfactants and hydrophobic polymers as disclosed in Yoon et al. would appear to enhance the hydrophobicity of the particulate material as in the instant process. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by utilizing the recited steps for increasing the hydrophobicity of the particulate material, to aid in dewatering the slurry.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Wang et al. 4,210,531. The claim differs from Yoon et al. by reciting that the surfactant is blended with a specific oil. Wang et al. disclose (see col. 2 line 27 through col. 4 line 24) that it is known in the art to utilize a combination of surfactant and the recited oils, to aid in dewatering mineral slurry

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concentrates. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by utilizing a surfactant blended with the recited oils in view of the teachings of Wang et al., to aid in dewatering the slurry.

6. Claims 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Sanner. The claims differ from Yoon et al. by reciting a step for adding an electrolyte to the slurry. Sanner disclose (see col. 3 lines 19-34) that it is known in the art to add an electrolyte such as aluminum sulfate to a clay slurry to aid in dewatering the clay slurry. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by adding the recited electrolyte to the slurry in view of the teachings of Sanner, to aid in dewatering the slurry.

7. Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Sun. The claims differ from Yoon et al. by reciting that the filter cake is subjected to a vibratory means. Sun disclose (see col. 1 line 12 through col. 2 line 64) that it is known in the art to subject a filter cake to a vibratory means, to aid in removing moisture from the filter cake. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by utilizing the recited vibratory means in view of the teachings of Sun, to aid in removing moisture from the filter cake.

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8. Claims 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Kenney 5,346,630. The claim differs from Yoon et al. by reciting that a surface tension lowering reagent is added to a filter cake in the form of a mist or spray. Kenney disclose (see col. 4 lines 1-61) that it is known in the art to spray a filter cake with a surface tension lowering reagent to aid in dewatering a coal slurry. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by adding the recited reagent to the filter cake in the form of a spray in view of the teachings of Wang et al., to aid in dewatering the slurry.

9. Claims 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. in view of Sanner as applied above, and further in view of Sun and Kenney 5,346,630. The claims differ from the references as applied above by reciting that the filter cake is subjected to a vibratory means, and that a surface tension lowering reagent is added to a filter cake in the form of a mist or spray. Sun disclose (see col. 1 line 12 through col. 2 line 64) that it is known in the art to subject a filter cake to a vibratory means, to aid in removing moisture from the filter cake. Kenney disclose (see col. 4 lines 1-61) that it is known in the art to spray a filter cake with a surface tension lowering reagent to aid in dewatering a coal slurry. It would have been obvious to one skilled in the art to modify the references as applied above, by utilizing the recited vibratory means and by adding the recited reagent to the filter cake in the form of a spray in view of the

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teachings of Sun and Kenney respectively, to aid in removing moisture from the filter cake and dewatering the slurry.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter A. Hruskoci whose telephone number is (703) 308-3839. The examiner can normally be reached on Monday through Friday from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Simmons, can be reached on (703) 308-1972. The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

  
**Peter A. Hruskoci**  
**Primary Examiner**  
**Art Unit 1724**

P. Hruskoci  
December 12, 2001